[aps,prl,twocolumn,showpacs,superscriptaddress,amssymb, nobalancelastpage]revtex4
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Separable states can be used to distribute entanglement
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abstract We show that no entanglement is necessary to distribute entanglement; that is, two distant particles can be entangled by sending a third particle that is never entangled with the other two. Similarly, two particles can become entangled by continuous interaction with a highly mixed mediating particle that never itself becomes entangled. We also consider analogous properties of completely positive maps, in which the composition of two separable maps can create entanglement.